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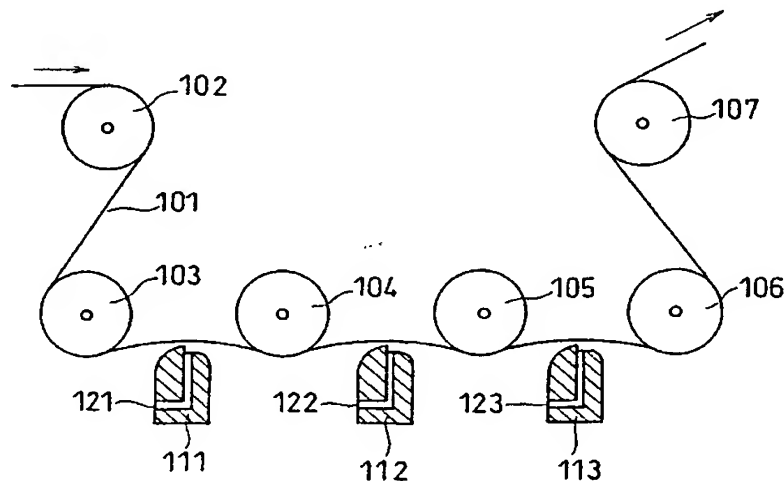
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(21) 国際出願番号: PCT/JP01/05864 (75) 発明者/出願人 (米国についてのみ): 内田 誠
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特願2000-204715 2000年7月6日 (06.07.2000) JP 575-0013 大阪府四条畷市田原台3-10-2 Osaka (JP). 武
特願2000-204717 2000年7月6日 (06.07.2000) JP 部安男 (TAKEBE, Yasuo) [JP/JP]; 〒611-0002 京都府
特願2001-010649 2001年1月18日 (18.01.2001) JP 宇治市木幡東中16-2 Kyoto (JP). 羽藤一仁 (HATOH,
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[続葉有]

(54) Title: METHOD FOR PRODUCING FILM ELECTRODE JOINTED PRODUCT AND METHOD FOR PRODUCING SOLID POLYMER TYPE FUEL CELL

(54) 発明の名称: 膜電極接合体の製造方法及び固体高分子型燃料電池の製造方法



(57) Abstract: A method for producing a film electrode jointed product (1) for a solid polymer type fuel cell which comprises a solid polymer electrolyte film (2) comprising an ion exchange film and, arranged to be opposite to each other via the ion exchange film, a first electrode (3) and a second electrode (4) having respectively a first catalyst layer (31) and a second catalyst layer (41), characterized in that it comprises applying a coating solution containing a catalyst on a substrate film (101), to thereby form the first catalyst layer (31), applying a coating solution having an ion exchange resin dissolved or dispersed therein, to thereby form the ion exchange film, applying a coating solution containing a catalyst thereon, to thereby form the second catalyst layer (41), and at last releasing the substrate film (101) from the resultant laminate. The method allows the continuous and efficient production of the film electrode jointed product (1) for a solid polymer type fuel cell having a catalyst layer of uniform thickness and exhibiting high performance.

[続葉有]

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2文字コード及び他の略語については、定期発行される
各PCTガゼットの巻頭に掲載されている「コードと略語
のガイダンスノート」を参照。

(57) 要約:

イオン交換膜からなる固体高分子電解質膜2と、該イオン交換膜を介して対向して配置される第1の触媒層31及び第2の触媒層41をそれぞれ備える第1の電極3及び第2の電極4とからなる固体高分子型燃料電池用膜電極接合体1の製造方法であって、基材フィルム101上に触媒を含む塗工液を塗工して第1の触媒層31を形成し、その上にイオン交換樹脂が液体に溶解又は分散された塗工液を塗工してイオン交換膜を形成し、次いでその上に触媒を含む塗工液を塗工して第2の触媒層41を形成し、最後に基材フィルム101を得られた積層体から剥離する。この方法によれば、触媒層の厚さが均一で高性能な固体高分子型燃料電池用の膜電極接合体1を効率的にかつ連続的に製造できる。

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl.⁷ H01M8/02, H01M4/88

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-2001
Kokai Jitsuyo Shinan Koho 1971-2001 Jitsuyo Shinan Toroku Koho 1996-2001

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 9-180740 A (Tokyo Gas K.K.), 11 July, 1997 (11.07.97), Claims; page 4, right column, line 16 to page 5, left column, line 34 (Family: none)	1-15
A	US 5972054 A (Showa Denko K.K.), 26 October, 1999 (26.10.99), Claims & JP 9-312162 A Claims	1-15
A	JP 9-92303 A (Aisin Seiki Co., Ltd.), 04 April, 1997 (04.04.97), Claims; page 3, left column, line 19 to page 5, right column, line 9 (Family: none)	1-15
A	JP 6-251779 A (Asahi Chemical Industry Co., Ltd.), 09 September, 1994 (09.09.94), Claims; page 5, left column, line 1 to right column, line 32 (Family: none)	1-15

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search
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Date of mailing of the international search report
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Name and mailing address of the ISA/
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/05864

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 7-176317 A (Sanyo Electric Co., Ltd.), 14 July, 1995 (14.07.95), claims; page 3, left column, line 8 to page 5, left column, line 1 (Family: none)	1-15

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According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) Int.Cl. ⁷ H01M8/02, H01M4/88		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-2001 Kokai Jitsuyo Shinan Koho 1971-2001 Jitsuyo Shinan Toroku Koho 1996-2001		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
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A	JP 6-251779 A (Asahi Chemical Industry Co., Ltd.), 09 September, 1994 (09.09.94), Claims; page 5, left column, line 1 to right column, line 32 (Family: none)	1-15
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
Date of the actual completion of the international search 02 October, 2001 (02.10.01)		Date of mailing of the international search report 23 October, 2001 (23.10.01)
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/05864

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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